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Dear Martin,

Thank you for your constructive comments in your letter of 20th October 2023. We have aimed to identify the specific requests from your letter as individual bullet points below and where practical, we have endeavoured to incorporate and secure in the DCO, the suggestions that you have requested into our proposals, through either

- Updated Engineering drawings for
 - Brain Bridge (HE551497-JAC-LDC-SCHW-DR-S-0011)
 - Rivenhall Brook (HE551497-JAC-LDC-SCHW-DR-S-0015)
 - Ashmans Bridge (HE551497-JAC-LDC-SCHW-DR-S-0018)
 - Domsey Brook Underbridge (HE551497-JAC-LDC-SCHW-DR-S-0023)
 - Domsey Brook East (HE551497-JAC-LDC-SCHW-DR-S-0026)
 - Roman River (HE551497-JAC-LDC-SCHW-DR-S-0030)
- Updated Register of Environmental Actions and Commitments (REAC)

Where it has not been practicable to incorporate the suggestions made by the Environment Agency this has also been explained below.

The Water Environment (Water Framework Directive) Regulations 2017 Without Prejudice Regulation 19 Submission has, where relevant, been updated to include for the changes included above. We will reply separately to your letter of 7th November on the derogation but note that some of the matters you have raised are addressed by the points below.

The Water Environment (Water Framework Directive) Regulations 2017 Without Prejudice Regulation 19 Submission has been submitted to the Secretary of State on 9th November 2023 for his consideration together with other responses to the consultation letter of 27th October 2023. We have not included with that submission either the updated Engineering drawings listed above or the revised REAC pending your consideration of these documents, which we anticipate will take place in conjunction with your own review of the Without Prejudice Regulation 19 Submission.

We have advised the Secretary of State that once we have received your responses on the revised Engineering drawings and the REAC we will send to the Secretary of State the revised versions of the Engineering drawings and the REAC, update the Certified Documents Schedule that forms part of the draft DCO Application and resubmit the draft DCO with the changed schedules and validate the revised version. We have not provided to

the Secretary of State a time period within which we expect to receive your comments, though we have advised that we expect you to comment once you have considered the submitted Without Prejudice Regulation 19 Submission, which describes the changes we have proposed and includes them within the application of the Regulation 19 tests.

Brain Bridge – Work No. 24(e)

- The revised proposals will now not extend the concrete bed.

Drawing (HE551497-JAC-LDC-SCHW-DR-S-0011) confirms that we have been able to develop the structure presented to the Examination [REP6-029] so that there will be no need to extend the concrete invert slab of the existing structure.

- Installation of a rock ramp on the downstream side of the Brain bridge.

We have carried out further topographical surveys of the channel and the cross sections in the River Brain hydraulic model and other supporting information, including the culvert's concrete invert levels from archived design drawings. In summary, the levels indicate that installing a rock ramp at the downstream end of the culvert is not viable because the average natural bed level is only marginally lower than the culvert outlet and rising bed level downstream, for a short distance.

However, the project will commit to investigate options in conjunction with the Environment Agency that could reasonably be implemented that would raise levels through the structure during low flows and improve fish passage through this section of the River Brain. REAC commitment BI51 addresses this point, *'Investigate options in conjunction with the Environment Agency that could reasonably be implemented that would increase flow depths under the structure during low flows and thus improve fish passage through this section of the River Brain'*.

- Further measures to improve fish passage to be added to the concrete bed under the bridge, these may include rocks placed under the bridge (preferred), coir roll or woody debris.

REAC commitment BI52 addresses this point., *'Consider, subject to further approvals, further measures to improve fish passage to be implemented to the concrete bed under the bridge, these may include rocks placed on the channel bed under the bridge (preferred), coir roll or woody debris'*.

- All measures to be installed will need to be approved by the Environment Agency's fish pass panel.

REAC commitment BI51 and BI52 addresses this point as the assumptions are *'Measures to be installed would need to be approved by the Environment Agency'*.

Rivenhall Brook – Work No. 42

- Options for introducing light within the structure.

Drawing (HE551497-JAC-LDC-SCHW-DR-S-0015) confirms that we have been able to develop the structure presented to the Examination [REP6-029] to include a light-well within the proposed central reserve of the A12 Mainline carriageway located at the approximate mid-point of the proposed structure. This is also confirmed in REAC commitment BI53, '*Introduction of natural light into the structure corridor*'.

In this location we have been able to accommodate this as the forward visibility requirements and the curvature of the A12 at this location results in an increased width of the central reserve.

- Further consideration should also be given to how the river channel and embankments will be formed. For the channel [to provide] a two-stage channel with a gravel bed, potentially utilising a firm bed of flints and gravel and avoiding the use of gabion baskets. Embankments and channel margins should as far as possible present an opportunity for vegetation to establish.

REAC commitment BI54 addresses this point, '*The design of the river channel and embankments to create a more 'natural' form, where practicable. Subject to hydraulic and cross-sectional constraints, a two-stage channel with a gravel bed would be formed potentially utilising a firm bed of flints and gravel and avoiding the use of gabion baskets. The embankments and channel margins should as far as practicable present an opportunity for vegetation to establish.*'. This is further shown on drawing (HE551497-JAC-LDC-SCHW-DR-S-0015).

Ashmans Underbridge – Work No. 45(a)

- Look at how to achieve scour protection of the piers through other means, including rock mattress, and the use of materials such as 'grasscrete' type products for the floodplain facing revetments.

REAC commitment BI55 addresses this point for the sections of the structure to be constructed by the proposed scheme, '*Scour protection of the new piers should be through means such as including rock mattresses, and/or the use of materials such as 'grasscrete' type products for the floodplain facing revetments where practicable*'.

Domsey Brook Underbridge – Work No. 67 (referred to as Domsey Brook west)

- The extension should be designed with a wider opening which tapers to match the existing structure if the existing structure cannot be improved.

The existing culvert includes 15m long wingwalls which run parallel to the river channel and act as a restriction to riverine processes. Drawing (HE551497-JAC-LDC-SCHW-DR-S-0023) shows that the wingwalls to the proposed structure are to be flared and widened to ensure any restrictions to riverine processes caused by the new structure are minimised. It is not practicable to widen the existing structure under the existing highway and embankment. For maintenance and operational reasons, it is not practicable to taper a wider structure into the existing cross section.

- Install good mammal ledges throughout the crossing length.

The existing REAC commitments BI32 makes this commitment. BI49 commits to monitoring use of the mammal ledges post construction. At Domsey Brook underbridge the risk assessment referred to is progressing. Initial output is that it will only be feasible to install one mammal ledge, and still maintain a safe walkway for operatives to carry out maintenance. This is shown on drawing HE551497-JAC-LDC-SCHW-DR-S-0023.

- As with the Rivenhall Brook crossing, the length means that lighting will also need to be improved and similar methods of introducing natural light should be assessed.

At this location due to the straight nature of the A12 there is no need to widen the central reserve for forward visibility. The highway geometry therefore does not generate the opportunity to create a 'light well' or similar towards the centre of the structure (as it does at Rivenhall Brook).

We would highlight that the vertical clearance between the top of the existing arch compared to the 1 in 100 flood water levels is 3.7m and the new extension aims to replicate this. Therefore, it is not considered that the structure poses a significant constraint on the ingress of natural light.

Domsey Brook (East) – Work No. 92

- The channel and embankments should be formed in as 'natural' a way as possible.

REAC commitment BI57 addresses this point, *'The design of the river channel and embankments to create a more 'natural' form, where practicable. Subject to hydraulic and cross-sectional constraints a two-stage channel with a gravel bed, would be formed potentially utilising a firm bed of flints and gravel and avoiding the use of gabion baskets. The embankments and channel margins should, as far as practicable, present an opportunity for vegetation to establish'*.

- The opportunity to create a two-stage channel which also includes some sinuosity should be explored.

REAC commitment BI57 also addresses this point which is further shown in drawing HE551497-JAC-LDC-SCHW-DR-S-0026.

Roman River – Work No. 109

- [The Environment Agency] understand that baffles are to be installed also, and we would like to see more details of these to consider where and how these will be fitted in conjunction with our fisheries team.

National Highways will install baffles in the bed of the existing culvert, subject to the necessary approvals of the Environment Agency. REAC commitment BI58 addresses this point, '*Installation of baffles in the culvert invert*'.

General Comments - demonstrate that the new or extended crossings do not make fish and mammal passage more difficult.

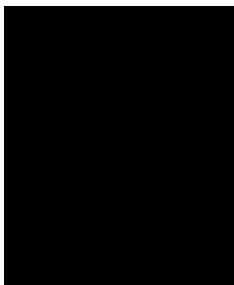
The measures put forward as part of the proposed scheme would not reduce permeability to fish and would continue to support movement of these species. Data have been recorded for either side of crossings; where there is a lack of regular survey, only conclusions can be inferred that there is movement of species through culverts. The Environmental Statement concluded no likely significant effects to fish (Appendix 9.1 of the Environmental Statement, Aquatic Ecology Report [APP-125]). Together with the mitigations described above the Applicant has ameliorated any potential effects to migration of fish as far as reasonably practicable.

River Ter Crossing.

Over the River Ter, the new carriageway layout can be accommodated within the structure with modifications needed only to the verges and parapets. This existing structure, at ground level and either side of the River Ter, is not amended by the Proposed Scheme and therefore the Proposed Scheme does not create any new impacts on the River Ter in this area. As such, the scheme does not propose any mitigation measures at this location.

However, National Highways offers to work with the Environment Agency to see whether funding could be secured outside of the Proposed Scheme for feasibility studies to be carried out to investigate better options to the existing situation from National Highways non-project funds, such as Designated Funds.

Yours sincerely



Phil Davie
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A12 Chelmsford to A120 Widening Scheme